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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,746	11/30/1999	CARLO VERTEMARA	99-S-096(167	9456

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EXAMINER

WONG, KIN C

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/451,746

Applicant(s)

VERTEMARA ET AL.

Examiner

K. Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16-22 and 24-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-22 and 24-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/18/05 has been entered.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims (1-3, 19, 32 and 40) are rejected under 35 U.S.C. 102(e) as being anticipated by Male (5982130).

Regarding claim 1: Male discloses a control circuit (as depicted in figure 1B Male) for controlling a motor (actuator motor - element 10 in figure 1B) assembly having a coil with first and second nodes (see nodes I and B in figure 1B) and having a movable arm (see col. 1, lines 48-52 of Male), the control circuit including:

a drive circuit (see col. 2, line 66 to col. 3, line 12) operable to be coupled to the first and second nodes of the coil, to receive a control signal, a current signal indicating

a magnitude of a current flowing through the coil, and speed signal (velocity), to generate a drive signal in response to the control, current, and speed signals, and to drive the coil with the drive signal during drive periods, and to uncouple (or interrupt) the drive signal from the coil during measurement period that alternate with and are separate from the drive periods (see col. 5, lines 7-52 of Male); and

a sensor circuit (element 24) coupled to the drive circuit and having first and second sensor nodes operable to be respectively coupled to the first and second nodes of the coil such that no element is in series with the coil between the first and second sensor nodes (as depicted in figure 1B), the sensor circuit operable to generate the speed signal having a level that corresponds to the speed of the arm (see col. 2, lines 56-65 and col. 3, lines 52-65). Thus, Male discloses a control circuit for detecting the arm speed via the VCM between two nodes of the VCM inputs or parallel coupled to the inputs without any series elements between the input nodes.

Regarding claim 2: Male teaches that wherein the sensor circuit is operable to generate the speed signal by sensing a back voltage (back-emf) across the coil during a portion of each measurement period when substantially zero current is flowing through the coil and by generating the level of the speed signal such that the level corresponds to the sensed back voltage (in col. 2, lines 8-14 and col. 4, lines 20-29 of Male).

Regarding claim 3: Male teaches that wherein the drive circuit is operable to accelerate the arm to a predetermined speed and to maintain the arm at approximately the predetermined speed for a predetermined time period (in col. 2, lines 8-29 of Male).

Regarding claim 32: Male teaches that wherein the drive signal is nondithered (in col. 2, lines 14-18 of Male which as inline with the instant specification on page 9, line 8 to page 10, line 11).

Regarding claim 40: Male teaches that wherein the drive circuit is operable to generate the drive signal in response to the sum of the control, current and speed signals (in col. 2, line 66 to col. 3, line 12 of Male).

Regarding claim 19: the method claim 19 is drawn to the method of using the corresponding apparatus claimed in claims (1-3). Therefore method claim (19) corresponds to apparatus claims (1-3) and is rejected for the same reasons of anticipation as used above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims (4-13, 16-18, 20-22, 24-39 and 41-45) are rejected under 35 U.S.C. 103(a) as being unpatentable over Male (5982130) in view of Drouin (6353510).

Regarding claims 4, 8, 12, 30 and 41: the reason for Male is stated in above. Although Male discloses retraction or unloading or parking the head in col. 4, line 50 to col. 5, line 15, Male is silent on the capability of the parking/unparking or loading/unloading processes with the associated components. Drouin is relied on the

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teaching the capability of parking/unparking process with the associated components (the associated components are depicted in figures 5A, 5F and 7 and the process in col. 2, lines 47-55; col. 9, line 44 to col. 10, line 6 and col. 10, line 62 to col. 11, line 18 of Drouin).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to includes the parking/unparking capability with the associated component as taught by Drouin. The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the user with the control of the parking/unparking process or the physical characteristics the device as suggested in col. 12, lines 10-15 of Drouin.

Regarding claim 5: the combination of Male and Drouin depicts in figure 1B that wherein the drive circuit is operable to generate the drive signal in response to the sum of the control and speed signals (in col. 2, line 66 to col. 3, line 12 of Male).

Regarding claim 6: the combination of Male and Drouin teaches that wherein the sensor circuit is operable to sense the speed of the read-write head by sensing a back voltage across the coil during a portion of each measurement period when approximately zero current is flowing through the coil (in col. 2, lines 8-14 and col. 4, lines 20-29 of Male).

Regarding claim 7: the combination of Male and Drouin teaches that wherein the sensor circuit is operable to: sense the speed of the read-write head by sensing a back voltage across the coil; and generate the speed of the read-write head by generating an intermediate signal from the sensed back voltage, sampling the intermediate signal

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during a portion of each measurement period when substantially zero current is flowing through the coil, and generating the level of the speed signal such that the level corresponds to the sampled intermediate signal (in col. 2, lines 8-14 and col. 4, line 20-29 of Male).

Regarding claim 9: the combination of Male and Drouin depicts in figure 1B of Male that wherein the control and feedback input terminals are couple together (see associated descriptions for details).

Regarding claim 10: the combination of Male and Drouin further depicts in figure 1B that a switch coupled between the feedback input terminal and the output terminal of the speed-sense circuit (see col. 4, line 6-29 of Male).

Regarding claim 11: the combination of Male and Drouin depicts in figure 1B that wherein the drive circuit includes a second output terminal operable to be coupled to a second terminal of the coil (see associated descriptions for details).

Regarding claim 13: the combination of Male and Drouin depicts at element 439 in figure 5A of Drouin that wherein the platform has a ramped side that faces the disk (see associated descriptions for details).

Regarding claims 16, 33, 35, 36 and 37: the combination of Male and Drouin wherein the drive circuit is operable to move the read-write head at a speed of approximately five inches per second (in col. 10, line 62 to col. 11, line 2 where Drouin describes the speed of the head is controlled to inches per second).

Regarding claims 17 and 18: the combination of Male and Drouin further depicts in figure 5F of Drouin that including: a post; the arm having a first end magnetically

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coupled to the coil, having a second end, and having a midsection pivotally mounted to the post; and the read-write coupled to the second end of the arm (see associated descriptions for details).

Regarding claim 34: the combination of Male and Drouin depicts in figure 2 of Male that wherein the drive circuit is operable to drive the coil with a linear signal (see associated descriptions for details).

Regarding claim 42: the combination of Male and Drouin teaches that wherein the sensor circuit is further operable to apply the speed signal to the drive circuit during the hard-park submode of operation and to isolate the speed signal from the drive circuit during the normal submode of operation (in col. 9, lines 44-67 of Drouin).

Regarding claim 43: the combination of Male and Drouin teaches that wherein the normal mode of operation includes read, write, and soft-park modes of operation.

Regarding claim 44: the combination of Male and Drouin teaches that wherein the drive circuit is operable to generate the drive signal in response to a sum of the control, current, and speed signals (in col. 2, line 66 to col. 3, line 12 of Male).

Regarding claim 45: the combination of Male and Drouin teaches that wherein the speed sensor circuit is operable to sample a back voltage across the coil responsive to the current signal indicating a predetermined current is flowing through the coil during the measurement mode of operation, and wherein the speed sensor circuit is further operable to generate the speed signal having a value that is function of the sampled back voltage.



Regarding claims 20-23, 25-26 and 36: method claims (20-23, 24-26 and 36) are drawn to the method of using the corresponding apparatus claimed in claims (12-13 and 16-18). Therefore method claims (20-23, 25-26 and 36) correspond to apparatus claims (12-13 and 16-18) and are rejected for the same reasons of obviousness as used above.

Regarding claims 27-29: method claims (27-29) are drawn to the method of using the corresponding apparatus claimed in claims (12-13 and 16-18). Therefore method claims 27-29 correspond to apparatus claims (12-13 and 16-18) and are rejected for the same reasons of obviousness as used above.

Regarding claim 30: method claim (30) is drawn to the method of using the corresponding apparatus claimed in claim 12. Therefore method claim (30) corresponds to apparatus claim 12 and is rejected for the same reasons of obviousness as used above.

Regarding claims 31 and 37: method claims (31 and 37) are drawn to the method of using the corresponding apparatus claimed in claims (8-11 and 34-35). Therefore method claims (31 and 37) correspond to apparatus claims (8-11 and 34-35) and are rejected for the same reasons of obviousness as used above.

### ***Response to Arguments***

Applicant's arguments filed 4/18/05 have been fully considered but they are not persuasive because the assertions are directed to the newly amended claims and are moot in view of the new ground(s) of rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blank et al (5615064), Cameron (6154340), Carobolante et al (6081112), Rowan et al (5781363) and Pedrazzini (6631045) are cited for parallel sensing the VCM nodes without a series element between the nodes.

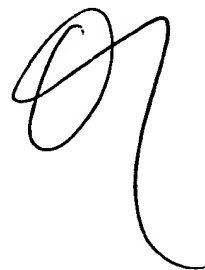
Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (571) 272-7566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kw

26 Jun 05

A handwritten signature in black ink, consisting of a large, stylized 'K' or 'W' shape with a long vertical stroke extending downwards.